



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

EPA Region 5 Records Ctr.



380914

REPLY TO THE ATTENTION OF:

October 25, 2010

SR-6J

John Artis, Director  
City of East Chicago  
East Chicago Department of Redevelopment  
4920 Larkspur Drive, P. O. Box 498  
East Chicago, Indiana 46312

Re: East Chicago Redevelopment Environmental Response Completion Report  
US Smelter and Lead Superfund Site, East Chicago, Indiana

Dear Mr. Artis,

The United States Environmental Protection Agency (EPA) has received the October 19, 2010, Completion Report for Environmental Response Activities (CR) which documents soil removal at 407 Vernon Avenue and 5018 Alexander Avenue in East Chicago, Indiana. The CR was prepared by Weaver Boos on behalf of the City of East Chicago and documents the execution of work that was described in the August 12, 2010, Workplan for these response activities. EPA's contractor, SulTRAC, collected confirmation samples after the excavation of these properties and found that soil lead concentrations were below 400 ppm, EPA's residential lead screening level. The excavations were also of a minimum depth of 2 feet, EPA's recommended excavation depth at residential properties. Therefore, EPA believes that the City of East Chicago has met the applicable requirements for the soil removal according to EPA's August 2003 Superfund Lead-Contaminated Residential Sites Handbook at these residential properties.

If you have any questions about this letter, please contact me at the following phone number: (312)353-8983.

Sincerely,

*Michael Berkoff*

Michael Berkoff, RPM  
Superfund Division

cc: R. Frey, EPA  
S. Kaiser, EPA  
D. Petroff, IDEM  
R. Lantz, SulTREC  
R. Baldino, SulTREC  
L. Turk, East Chicago  
F. Treviño, FMT  
E. Goldfarb, UIC  
P. Cambouris, WBC  
E. Neagu, WBC

October 19, 2010  
Project No. 3285-300-01

# **COMPLETION REPORT FOR ENVIRONMENTAL RESPONSE ACTIVITIES**

**407 Vernon Avenue and  
5018 Alexander Avenue  
East Chicago, Indiana**

**Prepared For:**

**City of East Chicago, Indiana  
Redevelopment Department  
4920 Larkspur Drive  
East Chicago, Indiana 46212**



**COMPLETION REPORT FOR ENVIRONMENTAL RESPONSE ACTIVITIES  
407 VERNON AVE. AND 5018 ALEXANDER AVE.  
EAST CHICAGO, INDIANA**

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## 1.0 INTRODUCTION

The City of East Chicago has retained Weaver Boos Consultants North Central, LLC (Weaver Boos) to conduct environmental response activities for properties located at 407 Vernon Avenue and 5018 Alexander Avenue in East Chicago, Indiana (see **Figure 1 – Site Location Map**). A Revised Work Plan dated August 12, 2010 prepared by Weaver Boos was submitted in response to the United States Environmental Protection Agency (USEPA) correspondence dated July 29, 2010 that conditionally approved the previous Work Plan dated July 9, 2010. This Completion Report demonstrates that the remediation activities completed in September 2010 and October 2010 at the subject properties have been conducted in accordance with the August 12, 2010 Revised Work Plan. Additional details regarding background of the project, initial waste profiling activities, excavation, transportation, and disposal of impacted material, and confirmation sampling/screening are presented in the following sections.

### 1.1. Background

The City of East Chicago, Indiana (the City) is located along the south shore of Lake Michigan in Northwest Indiana and is part of the greater Chicago metropolitan area. The city has a total area of 15.6 square miles. On April 8, 2009 the USEPA placed an area of the City on the National Priorities List (NPL) and is known as USS Lead. The area is comprised of approximately 240 acres and is bounded by Chicago Ave. on the north, Parish Ave. on the east, 149<sup>th</sup> and 151<sup>st</sup> St. on the south, and Aster Ave. on the west. The USEPA Region 5 Superfund Program began the remedial investigation of the site on June 26, 2009. USEPA must perform a remedial investigation (RI) and feasibility study (FS) before a Record of Decision (ROD) can be issued. The ROD will specify the actual remediation that will be undertaken at the Superfund site. Given the size and regulatory nature of a Superfund RI-FS, this process is anticipated to last a minimum of one to two years.

The City of East Chicago has planned to implement redevelopment work at the two subject properties, which are located within the area designated as a Superfund site. The work calls for, among other things, the rehabilitation and redevelopment of housing throughout the neighborhood with primarily single-family development and townhomes near commercial blocks. The City has used various forms of U.S. Department of Housing and Urban Development (HUD) funding for this effort.

Before the City became aware of specific requirements related to the Superfund process, it targeted these two vacant lots in the Superfund area for redevelopment with modular single-

family homes. To redevelop these lots it is necessary to first excavate soils for a foundation. USEPA has indicated that it is willing to let the City proceed with redevelopment efforts in this area provided the City funds these efforts, follows proper USEPA protocols, and the USEPA approves the Work Plan.

Representatives from Weaver Boos, the City of East Chicago, and USEPA and their contractor Sullivan International Group, Inc. (Sullivan) convened a meeting on June 21, 2010 at the USEPA Region 5 offices in Chicago, Illinois to discuss remediation activities at the subject sites. In general, the meeting addressed the proposed characterization and profiling activities, remediation methodology, the confirmation sampling approach, and HASP requirements. A Work Plan dated July 9, 2010 that proposed the scope of work of corrective action activities was submitted to USEPA. The USEPA conditionally approved this Work Plan in a correspondence dated July 29, 2010. As a result, a Revised Work Plan dated August 12, 2010 was submitted to the USEPA that included a response to the comments presented in their July 29, 2010 conditional approval correspondence.

The objective for remediation activities was to meet the Residential Lead Hazard Standards, TSCA 403, by removing and disposing of the upper two feet of soil from each of the subject properties. Upon excavation, Sullivan was to collect confirmation samples from the excavation and compare the results to the USEPA Residential cleanup level for lead of 400 mg/kg. Corrective action activities were completed in September 2010 and October 2010 at the subject properties in accordance with the August 12, 2010 Revised Work Plan.

## **1.2. Facility Description**

The properties consist of two single family lots. One lot is located at 407 Vernon Avenue and one lot is located at 5018 Alexander Avenue. Both are located in the Calumet residential neighborhood. Soil excavation and foundation construction for a modular home had been previously initiated at 5018 Alexander. Although no work has started on 407 Vernon Avenue, the City has committed to purchasing the modular home for this site as well. The following includes additional details regarding the completed corrective action activities.

## 2.0 WASTE CHARACTERIZATION ACTIVITIES

### 2.1. Waste Characterization Activities

Weaver Boos collected one composite sample from each property for purposes of waste characterization. The composite samples were collected from the 0-2 foot interval at each of the subject properties. Waste Management's CID-RDF landfill was selected as the disposal facility for this project based on its proximity to the subject properties. The samples were submitted for laboratory analysis of the following parameters based on CID-RDF permit requirements:

- Flashpoint
- Total Phenol
- Reactive Cyanide
- PAHs
- TCLP Organics
- VOCs
- Total Lead
- Paint Filter
- Reactive Sulfide
- pH
- PCBs
- TCLP RCRA Metals
- SVOCs

In summary, sample results were below applicable hazardous waste criteria. Several inorganic and PAH parameters exhibited detectable concentrations. Both samples exhibited elevated total lead concentrations. The full laboratory analytical report for the waste characterization samples is included as **Appendix A**. The analytical report was used to secure approval for disposal at CID-RDF landfill operated by Waste Management in Chicago, Illinois.

### 3.0 REMEDIATION ACTIVITIES

Weaver Boos subcontracted RW Collins Co. of Chicago, Illinois to perform the remediation activities at the properties. The remediation technologies included use of a backhoe, haul trucks, and utility tools for excavation, transportation and offsite disposal. A photographic log of the remedial activities conducted at the properties is included as **Appendix B**.

#### 3.1. 407 Vernon Avenue

Remediation activities at 407 Vernon Avenue were conducted on September 20-21, 2010. Using an appropriately sized backhoe, the operator began excavating at the northwest portion and continued to the southeast portion of the property. The excavation was completed to a depth of approximately two feet below ground surface and the depth was confirmed using a laser level as the excavation progressed. Approximately 286 tons of soil was excavated for offsite disposal.

Confirmation samples were collected by Sullivan on September 27, 2010. The analytical results were transmitted to USEPA and the City on October 6, 2010. The confirmation samples from the front and back yards exhibited lead concentrations exceeding the USEPA Residential cleanup level for lead of 400 mg/kg.

According to the USEPA conditional approval correspondence, dated July 29, 2010, only the top two feet of impacted soil was required for excavation and offsite disposal. Upon receipt and review of the analytical results, the USEPA indicated during various verbal and email communications that although they do not anticipate selecting a cleanup for the residential portion of the USS Lead Superfund Site that requires excavation of contaminated soil further than two feet, they have not selected a final remedy for the site to date. Consequently, there is a chance that additional excavation may be necessary in the future after USEPA reaches a remedy for the superfund site. As a result, East Chicago was given the choice to terminate excavation at two feet below ground surface or make an effort to remove the impacted soil exceeding the 400 mg/kg for lead. Since East Chicago was removing soil in support of construction of a basement anyway, they elected to remove additional soil in the basement area in order for in-place soil to meet the applicable lead clean up goal.

Weaver Boos and their subcontractor returned to the property on October 12, 2010 to excavate and dispose of additional soil located within the area of the future building foundation. Additionally, the excavation extended into the City-owned right-of-way adjoining the southern boundary of the property to the asphalt roadway as much as possible without jeopardizing the

integrity of overhead utility lines. During these additional excavation efforts, Weaver Boos was accompanied by a representative from Sullivan to confirm that the soil exceeding 400 mg/kg for lead was excavated for offsite disposal. During excavation, the Sullivan representative screened the soil using an X-Ray Fluorescence Analyzer (XRF). Based on the results, Sullivan provided guidance regarding the extent of the excavation necessary to remove soil exceeding 400 mg/kg for lead. The excavation was terminated upon the Sullivan representative determining that the lead impacted soil exceeding 400 mg/kg was excavated for offsite disposal. No laboratory confirmation samples were collected as part of this additional excavation. In accordance with the USEPA July 29, 2010 approval correspondence, since the XRF data indicated lead concentrations were below 400 mg/kg, a geotextile visual barrier is not believed warranted prior to backfilling activities.

Most of the front (northern) portion of the property was excavated to a depth of approximately 4.5 feet. As the excavation continued to the south, clean sands were encountered at shallower depths (3 to 3.5 feet). The excavation in the right-of-way was completed to a depth of 2 feet. The amount of material excavated as part of the additional excavation was approximately 136 tons. The total amount of material removed from this property was approximately 422 tons.

### **3.2. 5018 Alexander Avenue**

Remediation activities at 5018 Alexander Avenue was initiated on September 21, 2010 and completed on the morning of September 23, 2010. Corrective action was conducted in a consistent manner as discussed above for the 407 Vernon Avenue property. Weaver Boos also removed the above grade soil piles leftover from the initial foundation excavation. After the above grade piles were removed, the remainder of the property was excavated to a depth of approximately two feet below ground surface. Again, a laser level was used to assess the depth of the excavation as the excavation progressed. The total amount of material excavated at the property was approximately 526 tons.

Confirmation samples were collected by Sullivan on September 27, 2010. The composite confirmation samples from the front and back yards exhibited lead concentrations below the USEPA Residential cleanup level for lead of 400 mg/kg. The analytical results were transmitted to USEPA and the City on October 6, 2010. Therefore, because the laboratory confirmation samples indicated lead concentrations were below 400 mg/kg, a geotextile visual barrier is not believed warranted prior to backfilling activities.

#### **4.0 CONCLUSIONS**

Remediation activities have been conducted at 407 Vernon Avenue and 5018 Alexander Avenue in East Chicago, Indiana. The completed activities consisted of excavating, transporting, and disposing the upper two feet of fill material and soil at both properties. During excavation, Sullivan collected confirmation samples from both properties. Results from the 5018 Alexander Avenue site met the applicable lead clean up goals. Results from the 407 Vernon Avenue site exhibited concentrations of lead in excess of the applicable clean up goal. Consequently, additional soil was excavated at 407 Vernon Avenue. Sullivan was onsite during the additional excavation activities at the 407 Vernon Avenue site to confirm soil exceeding 400 mg/kg has been removed based on XRF screening results. Based on the XRF screening results, the 407 Vernon Avenue site meets the applicable lead clean up goal.

A total of approximately 948 tons of impacted soil have been excavated and disposed offsite at the CID-RDF landfill. Based on the confirmation sample analytical results and field screening measurements using an XRF analyzer, it is believed no further remedial activities are required at the properties.

## FIGURES



## **APPENDIX A**

### **LABORATORY ANALYTICAL REPORT – WASTE CHARACTERIZATION**



September 3, 2010

Weaver Boos

Three First National Plaza  
70 W. Madison, Suite 4250  
Chicago, IL 60602-  
Re: Laraway, East Chicago

Work Order No.: 10H0662

Dear Peter Cambouris:

Microbac Laboratories, Inc. - Chicagoland Division received 4 sample(s) on 8/16/2010 11:30:00AM for the analyses presented in the following report as Work Order 10H0662.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please feel free to contact us.

Sincerely,  
Microbac Laboratories, Inc.

A handwritten signature in black ink, appearing to read "Dan Paluch", is written over a white background.

Dan Paluch  
Project Manager

**WORK ORDER SAMPLE SUMMARY****Date:** *Friday, September 3, 2010*

**Client:** Weaver Boos  
**Project:** Laraway, East Chicago  
**Lab Order:** 10H0662

| <b>Lab Sample ID</b> | <b>Client Sample ID</b> | <b>Tag Number</b> | <b>Collection Date</b> | <b>Date Received</b> |
|----------------------|-------------------------|-------------------|------------------------|----------------------|
| 10H0662-01           | VWC-1                   |                   | 08/16/2010 09:30       | 8/16/2010 11:30:00AM |
| 10H0662-02           | VWC-1                   |                   | 08/16/2010 09:30       | 8/16/2010 11:30:00AM |
| 10H0662-03           | AWC-1                   |                   | 08/16/2010 10:30       | 8/16/2010 11:30:00AM |
| 10H0662-04           | AWC-1                   |                   | 08/16/2010 10:30       | 8/16/2010 11:30:00AM |



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**CASE NARRATIVE****Date:** *Friday, September 3, 2010*

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**Client:** Weaver Boos  
**Project:** Laraway, East Chicago  
**Lab Order:** 10H0662

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The Laboratory Control Sample associated with these samples failed to meet the acceptance criteria for TCLP Mercury. This is considered insignificant, as the bias was high yet the sample concentration was below the reporting limit.

The Matrix Spike and Matrix Spike Duplicate performed on the AWC-1 sample failed to meet the accuracy criteria for 1,1-Dichloroethene, Benzene, Carbon tetrachloride, Chloroform, tetrachloroethene, and Trichloroethene with a high bias. The precision criteria were met.

## Analytical Results

Date: Friday, September 3, 2010

Client: Weaver Boos  
 Client Project: Laraway, East Chicago  
 Client Sample ID: VWC-1  
 Sample Description:  
 Matrix: Solid

Work Order/ID: 10H0662-01  
 Sampled: 08/16/2010 9:30  
 Received: 08/16/2010 11:30

| Analyses                            | AT | Result | RL                                   | Qual | Units | DF                               | Analyzed |
|-------------------------------------|----|--------|--------------------------------------|------|-------|----------------------------------|----------|
| Method: SW-846 8270C                |    |        | Analyst: cr                          |      |       |                                  |          |
| TCLP Semivolatile Organic Compounds |    |        | Prep Method: SW-846 1311/SW846 3510  |      |       | Prep Date/Time: 08/17/2010 09:44 |          |
| 1,4-Dichlorobenzene                 | A  | ND     | 0.050                                | mg/L | 1     | 08/17/2010 16:21                 |          |
| 2,4,6-Trichlorophenol               | A  | ND     | 0.050                                | mg/L | 1     | 08/17/2010 16:21                 |          |
| 2,4,6-Trichlorophenol               | A  | ND     | 0.050                                | mg/L | 1     | 08/17/2010 16:21                 |          |
| 2,4-Dinitrotoluene                  | A  | ND     | 0.050                                | mg/L | 1     | 08/17/2010 16:21                 |          |
| 2-Methylphenol                      | A  | ND     | 0.050                                | mg/L | 1     | 08/17/2010 16:21                 |          |
| 3/4-Methylphenol                    | A  | ND     | 0.050                                | mg/L | 1     | 08/17/2010 16:21                 |          |
| Hexachlorobenzene                   | A  | ND     | 0.050                                | mg/L | 1     | 08/17/2010 16:21                 |          |
| Hexachlorobutadiene                 | A  | ND     | 0.050                                | mg/L | 1     | 08/17/2010 16:21                 |          |
| Hexachloroethane                    | A  | ND     | 0.050                                | mg/L | 1     | 08/17/2010 16:21                 |          |
| Nitrobenzene                        | A  | ND     | 0.050                                | mg/L | 1     | 08/17/2010 16:21                 |          |
| Pentachlorophenol                   | A  | ND     | 0.25                                 | mg/L | 1     | 08/17/2010 16:21                 |          |
| Pyridine                            | A  | ND     | 0.050                                | mg/L | 1     | 08/17/2010 16:21                 |          |
| Total Cresol                        | M  | ND     | 0.050                                | mg/L | 1     | 08/17/2010 16:21                 |          |
| Surf: 2,4,6-Tribromophenol          | S  | 82.50  | 12.4-143                             | %REC | 1     | 08/17/2010 16:21                 |          |
| Surf: 2-Fluorobiphenyl              | S  | 65.70  | 15.2-111                             | %REC | 1     | 08/17/2010 16:21                 |          |
| Surf: 2-Fluorophenol                | S  | 61.80  | 16.8-121                             | %REC | 1     | 08/17/2010 16:21                 |          |
| Surf: Nitrobenzene-d5               | S  | 71.90  | 10-127                               | %REC | 1     | 08/17/2010 16:21                 |          |
| Surf: Phenol-d5                     | S  | 68.40  | 10-130                               | %REC | 1     | 08/17/2010 16:21                 |          |
| Surf: Terphenyl-d14                 | S  | 73.30  | 28.2-138                             | %REC | 1     | 08/17/2010 16:21                 |          |
| Method: SW 8260B                    |    |        | Analyst: BR                          |      |       |                                  |          |
| TCLP VOA Zero Head Extraction       |    |        | Prep Method: SW-846 1311/<noprep>    |      |       | Prep Date/Time: 08/17/2010 00:00 |          |
| 1,1-Dichloroethene                  | A  | ND     | 0.050                                | mg/L | 10    | 08/17/2010 21:58                 |          |
| 1,2-Dichloroethane                  | A  | ND     | 0.050                                | mg/L | 10    | 08/17/2010 21:58                 |          |
| 2-Butanone                          | A  | ND     | 0.10                                 | mg/L | 10    | 08/17/2010 21:58                 |          |
| Benzene                             | A  | ND     | 0.050                                | mg/L | 10    | 08/17/2010 21:58                 |          |
| Carbon tetrachloride                | A  | ND     | 0.050                                | mg/L | 10    | 08/17/2010 21:58                 |          |
| Chlorobenzene                       | A  | ND     | 0.050                                | mg/L | 10    | 08/17/2010 21:58                 |          |
| Chloroform                          | A  | ND     | 0.050                                | mg/L | 10    | 08/17/2010 21:58                 |          |
| Tetrachloroethene                   | A  | ND     | 0.050                                | mg/L | 10    | 08/17/2010 21:58                 |          |
| Trichloroethene                     | A  | ND     | 0.050                                | mg/L | 10    | 08/17/2010 21:58                 |          |
| Vinyl chloride                      | A  | ND     | 0.020                                | mg/L | 10    | 08/17/2010 21:58                 |          |
| 1,4-Dichlorobenzene                 | B  | ND     | 0.10                                 | mg/L | 10    | 08/17/2010 21:58                 |          |
| Surf: 1,2-Dichloroethane-d4         | S  | 105.00 | 74.5-132                             | %REC | 10    | 08/17/2010 21:58                 |          |
| Surf: 4-Bromofluorobenzene          | S  | 92.50  | 80-120                               | %REC | 10    | 08/17/2010 21:58                 |          |
| Surf: Dibromofluoromethane          | S  | 102.00 | 80-120                               | %REC | 10    | 08/17/2010 21:58                 |          |
| Surf: Toluene-d8                    | S  | 99.00  | 80-120                               | %REC | 10    | 08/17/2010 21:58                 |          |
| Method: SW-846 7470A                |    |        | Analyst: GJM                         |      |       |                                  |          |
| TCLP Mercury by CVAA                |    |        | Prep Method: SW-846 1311/SW-846 7470 |      |       | Prep Date/Time: 08/17/2010 09:58 |          |
| Mercury                             | A  | ND     | 0.00100                              | mg/L | 1     | 08/17/2010 12:28                 |          |

## Analytical Results

Date: Friday, September 3, 2010

Client: Weaver Boos  
 Client Project: Laraway, East Chicago  
 Client Sample ID: VWC-1  
 Sample Description:  
 Matrix: Solid

Work Order/ID: 10H0662-01  
 Sampled: 08/16/2010 9:30  
 Received: 08/16/2010 11:30

| Analyses                       | AT | Result | RL   | Qual | Units                            | DF | Analyzed         |
|--------------------------------|----|--------|--|------|----------------------------------|----|------------------|
| <b>TCLP Metals by ICP</b>      |    |        | Method: SW-846 6010B                             |      | Analyst: SA                      |    |                  |
|                                |    |        | Prep Method: SW-846 1311/SW846 3010A             |      | Prep Date/Time: 08/17/2010 09:41 |    |                  |
| Arsenic                        | A  | ND     | 0.0100   |      | mg/L                             | 1  | 08/17/2010 14:55 |
| Barium                         | A  | 0.957  | 0.500  |      | mg/L                             | 1  | 08/17/2010 14:55 |
| Cadmium                        | A  | 0.0112 | 0.00200  |      | mg/L                             | 1  | 08/17/2010 14:55 |
| Chromium                       | A  | 0.0285 | 0.00300  |      | mg/L                             | 1  | 08/17/2010 14:55 |
| Lead                           | A  | 0.892  | 0.00750  |      | mg/L                             | 1  | 08/17/2010 14:55 |
| Selenium                       | A  | ND     | 0.0300   |      | mg/L                             | 1  | 08/17/2010 14:55 |
| Silver                         | A  | ND     | 0.0100   |      | mg/L                             | 1  | 08/17/2010 14:55 |
| <b>Ignitability (Open Cup)</b> |    |        | Method: ASTM D92-90 Modified                     |      | Analyst: TMG                     |    |                  |
|                                |    |        |  |      | Prep Date/Time: 08/23/2010 13:44 |    |                  |
| Ignitability                   | A  | > 170  | 30   |      | °F                               | 1  | 08/23/2010 13:54 |
| <b>Paint Filter</b>            |    |        | Method: SW-846 9095B                             |      | Analyst: TMG                     |    |                  |
|                                |    |        |  |      | Prep Date/Time: 08/17/2010 06:02 |    |                  |
| Paint Filter                   | A  | Pass   | 0.0  |      | Pass/Fail                        | 1  | 08/17/2010 6:57  |
| <b>pH</b>                      |    |        | Method: SW-846 9045C                             |      | Analyst: CS                      |    |                  |
|                                |    |        |  |      | Prep Date/Time: 08/17/2010 14:00 |    |                  |
| pH                             | A  | 8.12   | 2.00   |      | pH Units                         | 1  | 08/17/2010 14:10 |
| <b>Total Phenolics</b>         |    |        | Method: SW-846 9066                              |      | Analyst: ARCEL                   |    |                  |
|                                |    |        | Prep Method: Solid Phenolics Distillation        |      | Prep Date/Time: 08/23/2010 05:10 |    |                  |
| Phenolics, Total Recoverable   | A  | 1.7    | 0.50   |      | mg/Kg                            | 1  | 08/23/2010 10:48 |
| <b>Reactive Cyanide</b>        |    |        | Method: SW-846 9014 Rev 0                        |      | Analyst: ARCEL                   |    |                  |
|                                |    |        | Prep Method: Solid Reactive CN Distillation      |      | Prep Date/Time: 08/17/2010 11:48 |    |                  |
| Reactive Cyanide               | A  | ND     | 9.5  |      | mg/Kg                            | 1  | 08/17/2010 13:24 |
| <b>Reactive Sulfide</b>        |    |        | Method: SW-846 9034                              |      | Analyst: AS                      |    |                  |
|                                |    |        | Prep Method: Solid Reactive Sulfide Distillation |      | Prep Date/Time: 08/17/2010 09:05 |    |                  |
| Reactive Sulfide               | A  | ND     | 9.5  |      | mg/Kg                            | 1  | 08/17/2010 13:43 |

## Analytical Results

Date: Friday, September 3, 2010

Client: Weaver Boos  
 Client Project: Laraway, East Chicago  
 Client Sample ID: VWC-1  
 Sample Description:  
 Matrix: Solid

Work Order/ID: 10H0662-02  
 Sampled: 08/16/2010 9:30  
 Received: 08/16/2010 11:30

| Analyses                              | AT | Result | RL                               | Qual | Units | DF | Analyzed         |
|---------------------------------------|----|--------|----------------------------------|------|-------|----|------------------|
| Method: SW-846 8082                   |    |        | Analyst: jw                      |      |       |    |                  |
| Prep Method: SW846 3550               |    |        | Prep Date/Time: 08/30/2010 12:55 |      |       |    |                  |
| <b>Polychlorinated Biphenyls</b>      |    |        |                                  |      |       |    |                  |
| Aroclor 1016                          | A  | ND     | 33                               |      | µg/Kg | 1  | 08/30/2010 18:17 |
| Aroclor 1221                          | A  | ND     | 33                               |      | µg/Kg | 1  | 08/30/2010 18:17 |
| Aroclor 1232                          | A  | ND     | 33                               |      | µg/Kg | 1  | 08/30/2010 18:17 |
| Aroclor 1242                          | A  | ND     | 33                               |      | µg/Kg | 1  | 08/30/2010 18:17 |
| Aroclor 1248                          | A  | ND     | 33                               |      | µg/Kg | 1  | 08/30/2010 18:17 |
| Aroclor 1254                          | A  | ND     | 33                               |      | µg/Kg | 1  | 08/30/2010 18:17 |
| Aroclor 1260                          | A  | 61     | 33                               |      | µg/Kg | 1  | 08/30/2010 18:17 |
| Aroclor 1262                          | A  | ND     | 33                               |      | µg/Kg | 1  | 08/30/2010 18:17 |
| Aroclor 1268                          | A  | ND     | 33                               |      | µg/Kg | 1  | 08/30/2010 18:17 |
| Total PCB's                           | A  | 61     | 33                               |      | µg/Kg | 1  | 08/30/2010 18:17 |
| Surf: Decachlorobiphenyl              | S  | 300.00 | 38-128                           | S    | %REC  | 1  | 08/30/2010 18:17 |
| Surf: Tetrachloro-m-xylene            | S  | 60.00  | 40-130                           |      | %REC  | 1  | 08/30/2010 18:17 |
| Method: SW-846 8270C                  |    |        | Analyst: cr                      |      |       |    |                  |
| Prep Method: SW846 3550               |    |        | Prep Date/Time: 08/27/2010 09:18 |      |       |    |                  |
| <b>Semivolatile Organic Compounds</b> |    |        |                                  |      |       |    |                  |
| 1,2,4-Trichlorobenzene                | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| 1,2-Dichlorobenzene                   | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| 1,4-Dichlorobenzene                   | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| 2,4,5-Trichlorophenol                 | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| 2,4,6-Trichlorophenol                 | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| 2,4-Dinitrotoluene                    | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| 2-Methylphenol                        | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| 3/4-Methylphenol                      | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Eis(2-chloroethyl)ether               | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Eis(2-ethylhexyl)phthalate            | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Hexachlorobenzene                     | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Hexachlorobutadiene                   | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Hexachlorocyclopentadiene             | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Hexachloroethane                      | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Nitrobenzene                          | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| N-Nitrosodi-n-propylamine             | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| N-Nitrosodiphenylamine                | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Heptachlorophenol                     | A  | ND     | 1.6                              |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Pyridine                              | A  | ND     | 0.33                             |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Surf: 2,4,6-Tribromophenol            | S  | 87.40  | 13.9-145                         |      | %REC  | 1  | 08/27/2010 17:51 |
| Surf: 2-Fluorobiphenyl                | S  | 72.50  | 28.1-110                         |      | %REC  | 1  | 08/27/2010 17:51 |
| Surf: 2-Fluorophenol                  | S  | 51.90  | 24.5-110                         |      | %REC  | 1  | 08/27/2010 17:51 |
| Surf: Nitrobenzene-d5                 | S  | 65.40  | 33.6-110                         |      | %REC  | 1  | 08/27/2010 17:51 |
| Surf: Phenol-d5                       | S  | 67.40  | 29.6-110                         |      | %REC  | 1  | 08/27/2010 17:51 |
| Surf: Terphenyl-d14                   | S  | 81.90  | 35.8-121                         |      | %REC  | 1  | 08/27/2010 17:51 |

LL Polynuclear Aromatic Hydrocarbons by GC/MS

Method: SW-846 8270C  
 Prep Method: SW846 3550

Analyst: cr  
 Prep Date/Time: 08/27/2010 09:18

# Analytical Results

Date: Friday, September 3, 2010

Client: Weaver Boos  
 Client Project: Laraway, East Chicago  
 Client Sample ID: VWC-1  
 Sample Description:  
 Matrix: Solid

Work Order/ID: 10H0662-02  
 Sampled: 08/16/2010 9:30  
 Received: 08/16/2010 11:30

| Analyses                                      | AT | Result | RL                               | Qual | Units | DF | Analyzed         |
|---|----|--------|----------------------------------|------|-------|----|------------------|
| Method: SW-846 8270C                          |    |        | Analyst: cr                      |      |       |    |                  |
| LL Polynuclear Aromatic Hydrocarbons by GC/MS |    |        | Prep Date/Time: 08/27/2010 09:18 |      |       |    |                  |
| Prep Method: SW846 3550                       |    |        |                                  |      |       |    |                  |
| Acenaphthylene                                | A  | ND     | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Anthracene                                    | A  | 0.089  | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Benzo[a]anthracene                            | A  | 0.34   | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Benzo[a]pyrene                                | A  | 0.25   | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Benzo[g,h,i]perylene                          | A  | 0.24   | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Benzo[k]fluoranthene                          | A  | 0.20   | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Chrysene                                      | A  | 0.35   | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Dibenz[a,h]anthracene                         | A  | 0.092  | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Fluoranthene                                  | A  | 0.68   | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Fluorene                                      | A  | ND     | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Indeno[1,2,3cd]pyrene                         | A  | 0.20   | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Naphthalene                                   | A  | ND     | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Phenanthrene                                  | A  | 0.38   | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Pyrene  | A  | 0.61   | 0.050                            |      | mg/Kg | 1  | 08/27/2010 17:51 |
| Surr: 2-Fluorobiphenyl                        | S  | 72.50  | 24.5-110                         |      | %REC  | 1  | 08/27/2010 17:51 |
| Surr: Nitrobenzene-d5                         | S  | 65.40  | 33.6-110                         |      | %REC  | 1  | 08/27/2010 17:51 |
| Surr: Terphenyl-d14                           | S  | 81.90  | 35.8-121                         |      | %REC  | 1  | 08/27/2010 17:51 |

|                             |   |        |                                  |  |       |   |                  |
|-----------------------------|---|--------|----------------------------------|--|-------|---|------------------|
| Method: SW-846 8260B        |   |        | Analyst: jln                     |  |       |   |                  |
| Volatile Organic Compounds  |   |        | Prep Date/Time: 08/27/2010 13:20 |  |       |   |                  |
| 1,1,1-Trichloroethane       | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| 1,1,2-Trichloroethane       | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| 1,1-Dichloroethene          | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| 1,2-Dichloroethane          | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| 1,2-Dichloropropane         | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| 2-Butanone                  | A | ND     | 0.010                            |  | mg/Kg | 1 | 08/27/2010 17:21 |
| Benzene                     | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| Bromoform                   | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| Carbon tetrachloride        | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| Chlorobenzene               | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| Chloroform                  | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| cis-1,2-Dichloroethene      | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| cis-1,3-Dichloropropene     | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| Dibromochloromethane        | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| Methylene chloride          | A | ND     | 0.020                            |  | mg/Kg | 1 | 08/27/2010 17:21 |
| Styrene                     | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| Tetrachloroethene           | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| trans-1,2-Dichloroethene    | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| Trichloroethene             | A | ND     | 0.0050                           |  | mg/Kg | 1 | 08/27/2010 17:21 |
| Vinyl chloride              | A | ND     | 0.010                            |  | mg/Kg | 1 | 08/27/2010 17:21 |
| 1,4-Dichlorobenzene         | B | ND     | 0.010                            |  | mg/Kg | 1 | 08/27/2010 17:21 |
| Surr: 1,2-Dichloroethane-d4 | S | 126.00 | 51.7-162                         |  | %REC  | 1 | 08/27/2010 17:21 |

## Analytical Results

Date: Friday, September 3, 2010

Client: Weaver Boos  
 Client Project: Laraway, East Chicago  
 Client Sample ID: VWC-1  
 Sample Description:  
 Matrix: Solid

Work Order/ID: 10H0662-02  
 Sampled: 08/16/2010 9:30  
 Received: 08/16/2010 11:30

| Analyses                   | AT | Result | RL       | Qual  | Units | DF                               | Analyzed |
|----------------------------|----|--------|----------|-------|-------|----------------------------------|----------|
| Method: SW-846 8260B       |    |        |          |       |       | Analyst: jln                     |          |
| Volatile Organic Compounds |    |        |          |       |       | Prep Date/Time: 08/27/2010 13:20 |          |
| Sur: 4-Bromofluorobenzene  | S  | 75.40  | 57.4-135 | %REC  | 1     | 08/27/2010 17:21                 |          |
| Sur: Dibromofluoromethane  | S  | 106.00 | 63.5-139 | %REC  | 1     | 08/27/2010 17:21                 |          |
| Sur: Toluene-d8            | S  | 112.00 | 66.6-143 | %REC  | 1     | 08/27/2010 17:21                 |          |
| Method: SW-846 6010B       |    |        |          |       |       | Analyst: SA                      |          |
| Prep Method: SW846 3050B   |    |        |          |       |       | Prep Date/Time: 08/17/2010 07:32 |          |
| Total Metals by ICP        |    |        |          |       |       |                                  |          |
| Leac                       | A  | 2200   | 0.38     | mg/Kg | 1     | 08/17/2010 13:27                 |          |

**Analytical Results**

Date: Friday, September 3, 2010

Client: Weaver Boos  
 Client Project: Laraway, East Chicago  
 Client Sample ID: AWC-1  
 Sample Description:  
 Matrix: Solid

Work Order/ID: 10H0662-03  
 Sampled: 08/16/2010 10:30  
 Received: 08/16/2010 11:30

| Analyses                            | AT                                   | Result | RL           | Qual                             | Units | DF               | Analyzed |
|-------------------------------------|--------------------------------------|--------|--------------|----------------------------------|-------|------------------|----------|
| Method: SW-846 8270C                |                                      |        | Analyst: cr  |                                  |       |                  |          |
| TCLP Semivolatile Organic Compounds | Prep Method: SW-846 1311/SW846 3510  |        |              | Prep Date/Time: 08/17/2010 09:44 |       |                  |          |
| 1,4-Dichlorobenzene                 | A                                    | ND     | 0.050        | mg/L                             | 1     | 08/17/2010 16:39 |          |
| 2,4,5-Trichlorophenol               | A                                    | ND     | 0.050        | mg/L                             | 1     | 08/17/2010 16:39 |          |
| 2,4,6-Trichlorophenol               | A                                    | ND     | 0.050        | mg/L                             | 1     | 08/17/2010 16:39 |          |
| 2,4-Dinitrotoluene                  | A                                    | ND     | 0.050        | mg/L                             | 1     | 08/17/2010 16:39 |          |
| 2-Methylphenol                      | A                                    | ND     | 0.050        | mg/L                             | 1     | 08/17/2010 16:39 |          |
| 3/4-Methylphenol                    | A                                    | ND     | 0.050        | mg/L                             | 1     | 08/17/2010 16:39 |          |
| Hexachlorobenzene                   | A                                    | ND     | 0.050        | mg/L                             | 1     | 08/17/2010 16:39 |          |
| Hexachlorobutadiene                 | A                                    | ND     | 0.050        | mg/L                             | 1     | 08/17/2010 16:39 |          |
| Hexachloroethane                    | A                                    | ND     | 0.050        | mg/L                             | 1     | 08/17/2010 16:39 |          |
| Nitrobenzene                        | A                                    | ND     | 0.050        | mg/L                             | 1     | 08/17/2010 16:39 |          |
| Pentachlorophenol                   | A                                    | ND     | 0.25         | mg/L                             | 1     | 08/17/2010 16:39 |          |
| Pyridine                            | A                                    | ND     | 0.050        | mg/L                             | 1     | 08/17/2010 16:39 |          |
| Total Cresol                        | M                                    | ND     | 0.050        | mg/L                             | 1     | 08/17/2010 16:39 |          |
| Surr: 2,4,6-Tribromophenol          | S                                    | 75.40  | 12.4-143     | %REC                             | 1     | 08/17/2010 16:39 |          |
| Surr: 2-Fluorobiphenyl              | S                                    | 63.50  | 15.2-111     | %REC                             | 1     | 08/17/2010 16:39 |          |
| Surr: 2-Fluorophenol                | S                                    | 59.60  | 16.8-121     | %REC                             | 1     | 08/17/2010 16:39 |          |
| Surr: Nitrobenzene-d5               | S                                    | 71.20  | 10-127       | %REC                             | 1     | 08/17/2010 16:39 |          |
| Surr: Phenol-d5                     | S                                    | 62.70  | 10-130       | %REC                             | 1     | 08/17/2010 16:39 |          |
| Surr: Terphenyl-d14                 | S                                    | 65.30  | 28.2-138     | %REC                             | 1     | 08/17/2010 16:39 |          |
| Method: SW 8260B                    |                                      |        | Analyst: BR  |                                  |       |                  |          |
| TCLP VOA Zero Head Extraction       | Prep Method: SW-846 1311/<noprep>    |        |              | Prep Date/Time: 08/18/2010 00:00 |       |                  |          |
| 1,1-Dichloroethene                  | A                                    | ND     | 0.050        | mg/L                             | 10    | 08/18/2010 13:59 |          |
| 1,2-Dichloroethane                  | A                                    | ND     | 0.050        | mg/L                             | 10    | 08/18/2010 13:59 |          |
| 2-Butanone                          | A                                    | ND     | 0.10         | mg/L                             | 10    | 08/18/2010 13:59 |          |
| Benzene                             | A                                    | ND     | 0.050        | mg/L                             | 10    | 08/18/2010 13:59 |          |
| Carbon tetrachloride                | A                                    | ND     | 0.050        | mg/L                             | 10    | 08/18/2010 13:59 |          |
| Chlorobenzene                       | A                                    | ND     | 0.050        | mg/L                             | 10    | 08/18/2010 13:59 |          |
| Chloroform                          | A                                    | ND     | 0.050        | mg/L                             | 10    | 08/18/2010 13:59 |          |
| Tetrachloroethene                   | A                                    | ND     | 0.050        | mg/L                             | 10    | 08/18/2010 13:59 |          |
| Trichloroethene                     | A                                    | ND     | 0.050        | mg/L                             | 10    | 08/18/2010 13:59 |          |
| Vinyl chloride                      | A                                    | ND     | 0.020        | mg/L                             | 10    | 08/18/2010 13:59 |          |
| 1,4-Dichlorobenzene                 | B                                    | ND     | 0.10         | mg/L                             | 10    | 08/18/2010 13:59 |          |
| Surr: 1,2-Dichloroethane-d4         | S                                    | 109.00 | 74.5-132     | %REC                             | 10    | 08/18/2010 13:59 |          |
| Surr: 4-Bromofluorobenzene          | S                                    | 92.90  | 80-120       | %REC                             | 10    | 08/18/2010 13:59 |          |
| Surr: Dibromofluoromethane          | S                                    | 106.00 | 80-120       | %REC                             | 10    | 08/18/2010 13:59 |          |
| Surr: Toluene-d8                    | S                                    | 100.00 | 80-120       | %REC                             | 10    | 08/18/2010 13:59 |          |
| Method: SW-846 7470A                |                                      |        | Analyst: GJM |                                  |       |                  |          |
| TCLP Mercury by CVAA                | Prep Method: SW-846 1311/SW-846 7470 |        |              | Prep Date/Time: 08/17/2010 09:58 |       |                  |          |
| Mercury                             | A                                    | ND     | 0.00100      | mg/L                             | 1     | 08/17/2010 12:30 |          |

# Microbac

## Analytical Results

Date: Friday, September 3, 2010

Client: Weaver Boos  
Client Project: Laraway, East Chicago  
Client Sample ID: AWC-1  
Sample Description:  
Matrix: Solid

Work Order/ID: 10H0662-03  
Sampled: 08/16/2010 10:30  
Received: 08/16/2010 11:30

| Analyses  | AT | Result  | RL      | Qual | Units     | DF | Analyzed         |
|---|----|---------|---------|------|-----------|----|------------------|
| Method: SW-846 6010B Analyst: SA  |    |         |         |      |           |    |                  |
| Prep Method: SW-846 1311/SW846 3010A Prep Date/Time: 08/17/2010 09:41             |    |         |         |      |           |    |                  |
| TCLP Metals by ICP  | A  | ND      | 0.0100  |      | mg/L      | 1  | 08/17/2010 15:01 |
| Arsenic   | A  | ND      | 0.500   |      | mg/L      | 1  | 08/17/2010 15:01 |
| Barium  | A  | 0.00450 | 0.00200 |      | mg/L      | 1  | 08/17/2010 15:01 |
| Cadmium   | A  | ND      | 0.00300 |      | mg/L      | 1  | 08/17/2010 15:01 |
| Chromium  | A  | 0.0676  | 0.00750 |      | mg/L      | 1  | 08/17/2010 15:01 |
| Lead  | A  | ND      | 0.0300  |      | mg/L      | 1  | 08/17/2010 15:01 |
| Selenium  | A  | ND      | 0.0100  |      | mg/L      | 1  | 08/17/2010 15:01 |
| Silver  | A  | ND      |         |      |           |    |                  |
| Method: ASTM D92-90 Modified Analyst: TMG   |    |         |         |      |           |    |                  |
| Prep Date/Time: 08/17/2010 15:09  |    |         |         |      |           |    |                  |
| Ignitability (Open Cup)   | A  | > 170   | 30      |      | °F        | 1  | 08/17/2010 15:09 |
| Ignitability  |    |         |         |      |           |    |                  |
| Method: SW-846 9095B Analyst: TMG   |    |         |         |      |           |    |                  |
| Prep Date/Time: 08/17/2010 06:02  |    |         |         |      |           |    |                  |
| Paint Filter  | A  | Pass    | 0.0     |      | Pass/Fail | 1  | 08/17/2010 6:57  |
| Faint Filter  |    |         |         |      |           |    |                  |
| Method: SW-846 9045C Analyst: CS  |    |         |         |      |           |    |                  |
| Prep Date/Time: 08/17/2010 14:00  |    |         |         |      |           |    |                  |
| pH  | A  | 8.47    | 2.00    |      | pH Units  | 1  | 08/17/2010 14:10 |
| pH  |    |         |         |      |           |    |                  |
| Method: SW-846 9066 Analyst: ARCEL  |    |         |         |      |           |    |                  |
| Prep Method: Solid Phenolics Distillation Prep Date/Time: 08/23/2010 05:10        |    |         |         |      |           |    |                  |
| Total Phenolics   | A  | ND      | 0.49    |      | mg/Kg     | 1  | 08/23/2010 10:48 |
| Phenolics, Total Recoverable  |    |         |         |      |           |    |                  |
| Method: SW-846 9014 Rev 0 Analyst: ARCEL  |    |         |         |      |           |    |                  |
| Prep Method: Solid Reactive CN Distillation Prep Date/Time: 08/17/2010 11:48      |    |         |         |      |           |    |                  |
| Reactive Cyanide  | A  | ND      | 9.3     |      | mg/Kg     | 1  | 08/17/2010 13:25 |
| Reactive Cyanide  |    |         |         |      |           |    |                  |
| Method: SW-846 9034 Analyst: AS   |    |         |         |      |           |    |                  |
| Prep Method: Solid Reactive Sulfide Distillation Prep Date/Time: 08/17/2010 09:05 |    |         |         |      |           |    |                  |
| Reactive Sulfide  | A  | ND      | 9.3     |      | mg/Kg     | 1  | 08/17/2010 13:43 |
| Reactive Sulfide  |    |         |         |      |           |    |                  |



## Analytical Results

Date: Friday, September 3, 2010

Client: Weaver Boos  
 Client Project: Laraway, East Chicago  
 Client Sample ID: AWC-1  
 Sample Description:  
 Matrix: Solid

Work Order/ID: 10H0662-04  
 Sampled: 08/16/2010 10:30  
 Received: 08/16/2010 11:30

| Analyses   | AT | Result | RL       | Qual | Units | DF | Analyzed         |
|--|----|--------|----------|------|-------|----|------------------|
| Method: SW-846 8082 Analyst: jw                          |    |        |          |      |       |    |                  |
| Prep Method: SW846 3550 Prep Date/Time: 08/30/2010 12:55 |    |        |          |      |       |    |                  |
| <b>Polychlorinated Biphenyls</b>                         |    |        |          |      |       |    |                  |
| Aroclor 1016   | A  | ND     | 33       |      | µg/Kg | 1  | 08/30/2010 18:42 |
| Aroclor 1221   | A  | ND     | 33       |      | µg/Kg | 1  | 08/30/2010 18:42 |
| Aroclor 1232   | A  | ND     | 33       |      | µg/Kg | 1  | 08/30/2010 18:42 |
| Aroclor 1242   | A  | ND     | 33       |      | µg/Kg | 1  | 08/30/2010 18:42 |
| Aroclor 1248   | A  | ND     | 33       |      | µg/Kg | 1  | 08/30/2010 18:42 |
| Aroclor 1254   | A  | ND     | 33       |      | µg/Kg | 1  | 08/30/2010 18:42 |
| Aroclor 1260   | A  | ND     | 33       |      | µg/Kg | 1  | 08/30/2010 18:42 |
| Aroclor 1262   | A  | ND     | 33       |      | µg/Kg | 1  | 08/30/2010 18:42 |
| Aroclor 1268   | A  | ND     | 33       |      | µg/Kg | 1  | 08/30/2010 18:42 |
| Total PCB's  | A  | ND     | 33       |      | µg/Kg | 1  | 08/30/2010 18:42 |
| Surr: Decachlorobiphenyl                                 | S  | 265.00 | 38-128   | S    | %REC  | 1  | 08/30/2010 18:42 |
| Surr: Tetrachloro-m-xylene                               | S  | 70.00  | 40-130   |      | %REC  | 1  | 08/30/2010 18:42 |
| Method: SW-846 8270C Analyst: cr                         |    |        |          |      |       |    |                  |
| Prep Method: SW846 3550 Prep Date/Time: 08/27/2010 09:18 |    |        |          |      |       |    |                  |
| <b>Semivolatile Organic Compounds</b>                    |    |        |          |      |       |    |                  |
| 1,2,4-Trichlorobenzene                                   | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| 1,2-Dichlorobenzene                                      | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| 1,4-Dichlorobenzene                                      | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| 2,4,5-Trichlorophenol                                    | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| 2,4,6-Trichlorophenol                                    | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| 2,4-Dinitrotoluene                                       | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| 2-Methylphenol   | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| 3/4-Methylphenol   | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| Bis(2-chloroethyl)ether                                  | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| Bis(2-ethylhexyl)phthalate                               | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| Hexachlorobenzene  | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| Hexachlorobutadiene                                      | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| Hexachlorocyclopentadiene                                | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| Hexachloroethane   | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| Nitrobenzene   | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| N-Nitrosodi-n-propylamine                                | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| N-Nitrosodiphenylamine                                   | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| Pentachlorophenol  | A  | ND     | 1.6      |      | mg/Kg | 1  | 08/27/2010 18:16 |
| Pyridine   | A  | ND     | 0.33     |      | mg/Kg | 1  | 08/27/2010 18:16 |
| Surr: 2,4,6-Tribromophenol                               | S  | 84.30  | 13.9-145 |      | %REC  | 1  | 08/27/2010 18:16 |
| Surr: 2-Fluorobiphenyl                                   | S  | 60.00  | 28.1-110 |      | %REC  | 1  | 08/27/2010 18:16 |
| Surr: 2-Fluorophenol                                     | S  | 52.10  | 24.5-110 |      | %REC  | 1  | 08/27/2010 18:16 |
| Surr: Nitrobenzene-d5                                    | S  | 61.80  | 33.6-110 |      | %REC  | 1  | 08/27/2010 18:16 |
| Surr: Phenol-d5  | S  | 58.10  | 29.6-110 |      | %REC  | 1  | 08/27/2010 18:16 |
| Surr: Terphenyl-d14                                      | S  | 75.30  | 35.8-121 |      | %REC  | 1  | 08/27/2010 18:16 |

Method: SW-846 8270C Analyst: cr  
 Prep Method: SW846 3550 Prep Date/Time: 08/27/2010 09:18

### LL Polynuclear Aromatic Hydrocarbons by GC/MS

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX.219.769.1664

## Analytical Results

Date: Friday, September 3, 2010

Client: Weaver Boos  
 Client Project: Laraway, East Chicago  
 Client Sample ID: AWC-1  
 Sample Description:  
 Matrix: Solid

Work Order/ID: 10H0662-04  
 Sampled: 08/16/2010 10:30  
 Received: 08/16/2010 11:30

| Analyses                                      | AT                      | Result | RL                               | Qual  | Units | DF               | Analyzed |
|---|-------------------------|--------|----------------------------------|-------|-------|------------------|----------|
| Method: SW-846 8270C                          |                         |        | Analyst: cr                      |       |       |                  |          |
| LL Polynuclear Aromatic Hydrocarbons by GC/MS | Prep Method: SW846 3550 |        | Prep Date/Time: 08/27/2010 09:18 |       |       |                  |          |
| Acenaphthylene                                | A                       | ND     | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Anthracene                                    | A                       | ND     | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Benzo[a]anthracene                            | A                       | 0.11   | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Benzo[a]pyrene                                | A                       | 0.11   | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Benzo[g,h,i]perylene                          | A                       | 0.13   | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Benzo[k]fluoranthene                          | A                       | ND     | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Beryserene                                    | A                       | 0.11   | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Dibenz[a,h]anthracene                         | A                       | ND     | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Fluoranthene                                  | A                       | 0.19   | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Fluorene                                      | A                       | ND     | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Indeno[1,2,3cd]pyrene                         | A                       | 0.11   | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Naphthalene                                   | A                       | ND     | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Phenanthrene                                  | A                       | 0.060  | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Pyrene  | A                       | 0.19   | 0.050                            | mg/Kg | 1     | 08/27/2010 18:16 |          |
| Surf: 2-Fluorobiphenyl                        | S                       | 60.00  | 24.5-110                         | %REC  | 1     | 08/27/2010 18:16 |          |
| Surf: Nitrobenzene-d5                         | S                       | 61.80  | 33.6-110                         | %REC  | 1     | 08/27/2010 18:16 |          |
| Surf: Terphenyl-d14                           | S                       | 75.30  | 35.8-121                         | %REC  | 1     | 08/27/2010 18:16 |          |

| Method: SW-846 8260B        |   |        | Analyst: jln                     |       |   |                  |
|-----------------------------|---|--------|----------------------------------|-------|---|------------------|
| Volatile Organic Compounds  |   |        | Prep Date/Time: 08/27/2010 13:20 |       |   |                  |
| 1,1,1-Trichloroethane       | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| 1,1,2-Trichloroethane       | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| 1,1-Dichloroethene          | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| 1,2-Dichloroethane          | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| 1,2-Dichloropropane         | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| 2-Butanone                  | A | ND     | 0.010                            | mg/Kg | 1 | 08/27/2010 17:50 |
| Benzene                     | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| Bromoform                   | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| Carbon tetrachloride        | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| Chlorobenzene               | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| Chloroform                  | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| cis-1,2-Dichloroethene      | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| cis-1,3-Dichloropropene     | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| Dibromochloromethane        | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| Methylene chloride          | A | ND     | 0.020                            | mg/Kg | 1 | 08/27/2010 17:50 |
| Styrene                     | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| Tetrachloroethene           | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| trans-1,2-Dichloroethene    | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| Trichloroethene             | A | ND     | 0.0050                           | mg/Kg | 1 | 08/27/2010 17:50 |
| Vinyl chloride              | A | ND     | 0.010                            | mg/Kg | 1 | 08/27/2010 17:50 |
| 1,4-Dichlorobenzene         | B | ND     | 0.010                            | mg/Kg | 1 | 08/27/2010 17:50 |
| Surf: 1,2-Dichloroethane-d4 | S | 126.00 | 51.7-162                         | %REC  | 1 | 08/27/2010 17:50 |



## Analytical Results

Date: Friday, September 3, 2010

**Client:** Weaver Boos  
**Client Project:** Laraway, East Chicago  
**Client Sample ID:** AWC-1  
**Sample Description:**  
**Matrix:** Solid

**Work Order/ID:** 10H0662-04  
**Sampled:** 08/16/2010 10:30  
**Received:** 08/16/2010 11:30

| Analyses                   | AT                               | Result | RL       | Qual  | Units | DF           | Analyzed                         |
|----------------------------|----------------------------------|--------|----------|-------|-------|--------------|----------------------------------|
| Method: SW-846 8260B       |                                  |        |          |       |       | Analyst: jln |                                  |
| Volatile Organic Compounds | Prep Date/Time: 08/27/2010 13:20 |        |          |       |       |              |                                  |
| Surr: 4-Bromofluorobenzene | S                                | 87.10  | 57.4-135 | %REC  | 1     | 08/27/2010   | 17:50                            |
| Surr: Dibromofluoromethane | S                                | 117.00 | 63.5-139 | %REC  | 1     | 08/27/2010   | 17:50                            |
| Surr: Toluene-d8           | S                                | 97.80  | 66.6-143 | %REC  | 1     | 08/27/2010   | 17:50                            |
| Method: SW-846 6010B       |                                  |        |          |       |       | Analyst: SA  |                                  |
| Total Metals by ICP        | Prep Method: SW846 3050B         |        |          |       |       |              | Prep Date/Time: 08/17/2010 07:32 |
| Lead                       | A                                | 140    | 0.38     | mg/Kg | 1     | 08/17/2010   | 13:33                            |

## FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

|       |    |   |
|-------|----|---|
| NA    | :: | Not Analyzed  |
| mg.L  | :: | Milligrams per Liter (ppm)  |
| mg.Kg | :: | Milligrams per Kilogram (ppm)   |
| U     | :: | Undetected  |
| J     | :: | Analyte concentration detected between RL and MDL (Metals / Organics)               |
| B     | :: | Detected in the associated method Blank at a concentration above the routine PQL/RL |
| D     | :: | Dilution performed on sample  |
| ND    | :: | Not Detected at the Reporting Limit (or the Method Detection Limit, if used)        |
| E     | :: | Value above quantitation range  |
| H     | :: | Analyte was prepared and/or analyzed outside of the analytical method holding time  |
| I     | :: | Matrix Interference   |
| R     | :: | RPD outside accepted recovery limits  |
| S     | :: | Spike recovery outside recovery limits  |
| Surr  | :: | Surrogate   |
| DF    | :: | Dilution Factor   |

## ANALYTE TYPES

|     |   |  |
|-----|---|--|
| A,B | = | Target Analyte   |
| I   | = | Internal Standard  |
| M   | = | Summation Analyte  |
| S   | = | Surrogate  |
| T   | = | Tentatively Identified Compound (TIC, concentration estimated) |

## QC SAMPLE IDENTIFICATIONS

|                 |   |   |       |   |                                     |
|-----------------|---|---|-------|---|-------------------------------------|
| MB_K            | = | Method Blank                            | ICSA  | = | Interference Check Standard "A"     |
| DU <sup>2</sup> | = | Method Duplicate                        | ICSAB | = | Interference Check Standard "AB"    |
| LC <sup>3</sup> | = | Laboratory Control Sample               | LCSD  | = | Laboratory Control Sample Duplicate |
| BS              | = | Method Blank Spike                      | BSD   | = | Method Blank Spike Duplicate        |
| MS              | = | Matrix Spike                            | MSD   | = | Matrix Spike Duplicate              |
| ICE             | = | Initial Calibration Blank               | CCB   | = | Continuing Calibration Blank        |
| ICV             | = | Initial Calibration Verification        | CCV   | = | Continuing Calibration Verification |
| PD <sup>3</sup> | = | Post Digestion Spike                    | SD    | = | Serial Dilution                     |
| OPR             | = | Ongoing Precision and Recovery Standard |       |   |                                     |

## CERTIFICATIONS

*Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.*

Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #100435)

Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)

Indiana DEM approved support laboratory for solid waste and wastewater analyses

Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)

Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)

Kentucky DEP for the chemical analysis of drinking water (lab #90147)

Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)

\*New York SDH for the chemical analysis of air and emissions (lab #11909)

North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations (certificate #597)

Tennessee DEC for the chemical analysis of drinking water (lab #04017)

Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)

**COOLER INSPECTION**Client Name: **Weaver Boos****Date:** Friday, September 3, 2010Date/Time Received: **08/16/2010 11:30**Work Order Number: **10H0662**Received by: **Dave Bryant**Checklist completed by: 8/16/2010 12:20:00PM | Dave BryantReviewed by: 8/17/2010 | DPPCarrier Name: **Client Delivered**Cooler ID: **Default Cooler**Container/Temp Blank Temperature: **6.00°C**

|   |     |                                     |    |                                     |   |
|---|-----|-------------------------------------|----|-------------------------------------|---|
| After-Hour Arrival?   | Yes | <input type="checkbox"/>            | No | <input checked="" type="checkbox"/> |   |
| Shipping container/cooler in good condition?                    | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            | Not Present <input type="checkbox"/>            |
| Custody seals intact on shipping container/cooler?              | Yes | <input type="checkbox"/>            | No | <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample containers?                      | Yes | <input type="checkbox"/>            | No | <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/> |
| COC present?  | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| COC included sufficient client identification?                  | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| COC included sufficient sample collector information?           | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| COC included a sample description?                              | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| COC agrees with sample labels?                                  | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| COC identified the appropriate matrix?                          | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| COC included date of collection?                                | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| COC included time of collection?                                | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| COC identified the appropriate number of containers?            | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| Samples in proper container/bottle?                             | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| Sample containers intact?                                       | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| Sufficient sample volume for indicated test?                    | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| All samples received within holding time?                       | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| If the samples are preserved, are the preservatives identified? | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |
| COC included the requested analyses?                            | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |   |

If No, adjusted by? \_\_\_\_\_

|  |     |                                     |    |                          |  |
|--|-----|-------------------------------------|----|--------------------------|--|
| COC signed when relinquished and received?         | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |  |
| Samples received on ice?                           | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |  |
| Samples properly preserved?                        | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> |  |
| Voa vials for aqueous samples have zero headspace? | Yes | <input type="checkbox"/>            | No | <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |

Cooler Comments: \_\_\_\_\_

**ANY "NO" EVALUATION (excluding After-Hour Receipt) REQUIRES CLIENT NOTIFICATION.**

| Sample ID  | Client Sample ID | Comments |
|------------|------------------|----------|
| 10H0662-01 | VWC-1            |          |
| 10H0662-02 | VWC-1            |          |
| 10H0662-03 | AWC-1            |          |
| 10H0662-04 | AWC-1            |          |



**APPENDIX B**  
**PHOTOGRAPHIC LOG**

**Photograph #1**

View looking  
northwest of  
excavation activities  
beginning on the  
northwest portion of  
the 407 Vernon  
Avenue property.



**Photograph #2**

View looking south  
of the 407 Vernon  
Avenue excavation  
activities.



**Photograph #3**

Excavated soil being loaded onto haul truck (view looking northeast).



**Photograph #4**

Depth of excavation verified using tape measure and laser level.



**Photograph #5**

View looking north  
of the 407 Vernon  
Avenue excavation  
activities.



**Photograph #6**

Initial excavation  
complete at 407  
Vernon Avenue.



**Photograph #7**

Excavation activities  
beginning at 5018  
Alexander Avenue  
(view looking west).



**Photograph #8**

Verifying excavation  
depth (view looking  
south).



**Photograph #9**

Above grade soil  
piles being removed  
(view looking east).



**Photograph #10**

Excavation progress-  
ing with below grade  
soil being removed  
(view looking north-  
west).



**Photograph #11**

Excavation nearly  
complete (view  
looking east).



**Photograph #12**

Excavation  
completed at 5018  
Alexander Avenue  
(view looking west).



**Photograph #13**

Additional soil being  
removed at 407  
Vernon Avenue on  
October 12, 2010.



**Photograph #14**

View of additional  
excavation looking  
northwest.

